

AMENDMENT OF THE CLAIMS

1. (Currently Amended) An aligning method of a ferroelectric liquid crystal display, comprising steps of:

disposing a first mask and a second mask, each of which has opening regions and blocking regions arranged in alternating fashion in vertical direction and horizontal direction corresponding to liquid crystal cells of the liquid crystal display including a lower plate and an upper plate; and

injecting a ferroelectric liquid crystal material within a liquid crystal panel;

arranging the first mask on a first alignment film formed on the upper plate of the liquid crystal panel;

rubbing the first alignment film of the upper plate through the first mask according to one rubbing direction;

arranging the second mask on a second alignment film formed on the lower plate of the liquid crystal panel; and

rubbing the second alignment film of the lower plate according to the one rubbing direction ~~in the same direction as the rubbing direction of the alignment film of the upper plate through the second mask,~~

wherein the opening regions of the first mask on the first alignment film corresponds to the blocking regions of the second mask on the second alignment film respectively, and the blocking regions of the first mask on the first alignment film corresponds to the opening regions of the second mask on the second alignment film respectively;

wherein each of the opening regions is substantially the same area as a liquid crystal cell, the liquid crystal cell corresponding to an area of a pixel electrode;

~~wherein the first mask is disposed on the first alignment film of the upper plate and the second mask is disposed on the second alignment film of the lower plate;~~

wherein the first alignment film of the upper plate and the second alignment film of the lower plate are rubbed according to the same rubbing direction; [[and]]

wherein after the upper and lower plates are assembled, the first and second alignment films have opposite rubbing directions in adjacent liquid crystal cells ~~are aligned in opposite directions each other; and~~

wherein the ferroelectric liquid crystal material in the adjacent liquid crystal cells is rotated to opposite spontaneous polarization direction.

2. (Canceled).

3. (Canceled).

4. (Previously Presented) The aligning method according to claim 1, the step of disposing a first mask and a second mask, further comprising the steps of:

arranging the first mask having opening regions on a first alignment film formed on an upper plate of the liquid crystal panel;

photo-exposing the first alignment film of the upper plate with an ultraviolet ray through the first mask;

arranging the second mask having opening regions on a second alignment film formed on the lower plate of the liquid crystal panel; and

photo-exposing the second alignment film of the lower plate through the second mask.

5. (Canceled).

6. (Canceled).

7. (Previously Presented) The aligning method according to claim 1, further comprising steps of:

phase-transiting the ferroelectric liquid crystal material within the liquid crystal panel from an isotropic phase to a nematic phase by lowering temperature of the liquid crystal panel; and

phase-transiting the ferroelectric liquid crystal within the liquid crystal panel from the nematic phase to a smectic C phase by further lowering the temperature of the liquid crystal panel.

8. (Currently Amended) An aligning method of a ferroelectric liquid crystal display, comprising steps of:

aligning an upper plate of a liquid crystal panel by using a first mask having a first plurality of opening regions patterned thereon;

rubbing a first alignment film of the upper plate through the first mask along a first direction;

aligning a lower plate of the liquid crystal panel by using a second mask having a second plurality of opening regions patterned thereon;

rubbing a second alignment film of the lower plate through the second mask along the first direction;[[,]]

assembling the upper and lower plates of the liquid crystal panel, such that the first and second alignment films are aligned in opposite directions each other; and

injecting a ferroelectric liquid crystal material between the assembled upper and lower plates of the liquid crystal panel,

wherein the opening regions of the first mask on the first alignment film corresponds to blocking regions of the second mask on the second alignment film respectively, and the opening regions of the second mask on the second alignment film corresponds to blocking regions of the first mask on the first alignment film respectively;

wherein each of opening regions of the first and second masks is substantially the same area as a liquid crystal cell, the liquid crystal cell corresponding to an area of a pixel electrode;

~~wherein the first mask is disposed on the first alignment film of the upper plate and the second mask is disposed on the second alignment film of the lower plate;~~ [[and]]

wherein the first alignment film of the upper plate and the second alignment film of the lower plate are rubbed according to the same rubbing direction;

wherein after the upper and lower plates are assembled, the first and second alignment films have opposite rubbing directions in adjacent liquid crystal cells; and

wherein the ferroelectric liquid crystal material in the adjacent liquid crystal cells is rotated to opposite spontaneous polarization direction.

9. (Withdrawn) A ferroelectric liquid crystal display, comprising:

a liquid crystal panel having first regions and second regions having rubbing directions that are respectively aligned in different directions, wherein the first regions and the second regions are alternately arranged in a vertical direction and horizontal direction of the liquid crystal panel;

a ferroelectric liquid crystal injected into the liquid crystal panel; and

a multiplied-speed driving circuit for driving the liquid crystal panel having the ferroelectric liquid crystal in accordance with a frequency multiplying a predetermined reference frequency.

10. (Withdrawn) The ferroelectric liquid crystal display according to claim 9, wherein each of the first regions and the second regions are substantially the same size as a liquid crystal cell.

11. (Withdrawn) The ferroelectric liquid crystal display according to claim 9, wherein the liquid crystal panel comprises:

an upper plate having first regions alternately arranged in a vertical direction and horizontal direction; and

a lower plate having second regions alternately arranged in a vertical direction and horizontal direction.

12. (Withdrawn) The ferroelectric liquid crystal display according to claim 9, wherein the multiplied-speed driving circuit comprises:

a timing controller for multiplying n -times to the reference frequency (where n is a positive integer) to generate a data control signal and a gate control signal based on the multiplied speed frequency;

a data driver for supplying one frame of data n times during one frame period to the liquid crystal panel in response to the data control signal; and

a gate driver for wholly scanning the liquid crystal panel n times during a frame period in response to the data control signal.

13. (Withdrawn) The ferroelectric liquid crystal display according to claim 12, further comprising: a frame memory for storing the frame of data under the control of the timing controller and for supplying the stored data to the data driver.

14. (Previously Presented) The aligning method according to claim 1, wherein the liquid crystal panel has first regions corresponding to the opening regions of the first mask and second regions corresponding to the opening regions of the second mask, the first regions and the second regions are respectively aligned in opposite directions.

15. (Previously Presented) The aligning method according to claim 8, wherein the liquid crystal panel has first regions corresponding to the opening regions of the first mask and second regions corresponding to the opening regions of the second mask, the first regions and the second regions are respectively aligned in opposite directions.

16. (Previously Presented) The aligning method according to claim 14, wherein the first regions and the second regions are alternately arranged in a vertical and horizontal direction of the liquid crystal panel.

17. (Previously Presented) The aligning method according to claim 15, wherein the first regions and the second regions are alternately arranged in a vertical and horizontal direction of the liquid crystal panel.

18. (Previously Presented) The aligning method according to claim 14, wherein the first regions and the second regions are substantially the same area as the liquid crystal cell of the liquid crystal panel.

19. (Previously Presented) The aligning method according to claim 15, wherein the first regions and the second regions are substantially the same area as the liquid crystal cell of the liquid crystal panel.